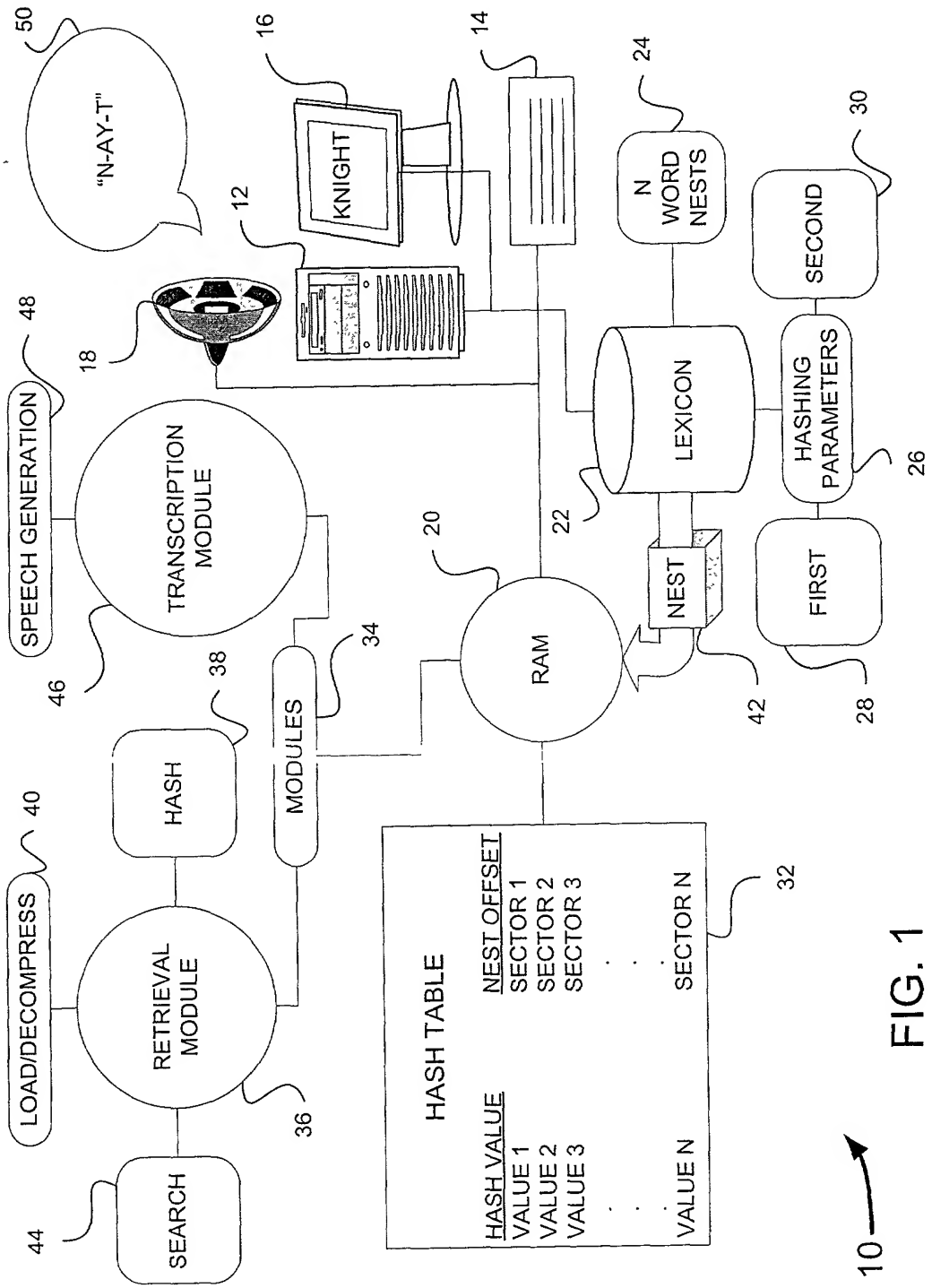

"N-AY-T"
50
KNIGHT
16
14
12
24
N WORD NESTS
SECOND
30
18
48
SPEECH GENERATION
TRANSCRIPTION MODULE
LEXICON
HASHING PARAMETERS
26
46
22
20
RAM
NEST
FIRST
42
28
34
MODULES
38
HASH
40
LOAD/DECOMPRESS
RETRIEVAL MODULE
36
HASH TABLE
HASH VALUE
VALUE 1
VALUE 2
VALUE 3
VALUE N
NEST OFFSET
SECTOR 1
SECTOR 2
SECTOR 3
SECTOR N
32
44
SEARCH
10

FIG. 1

FIG. 2

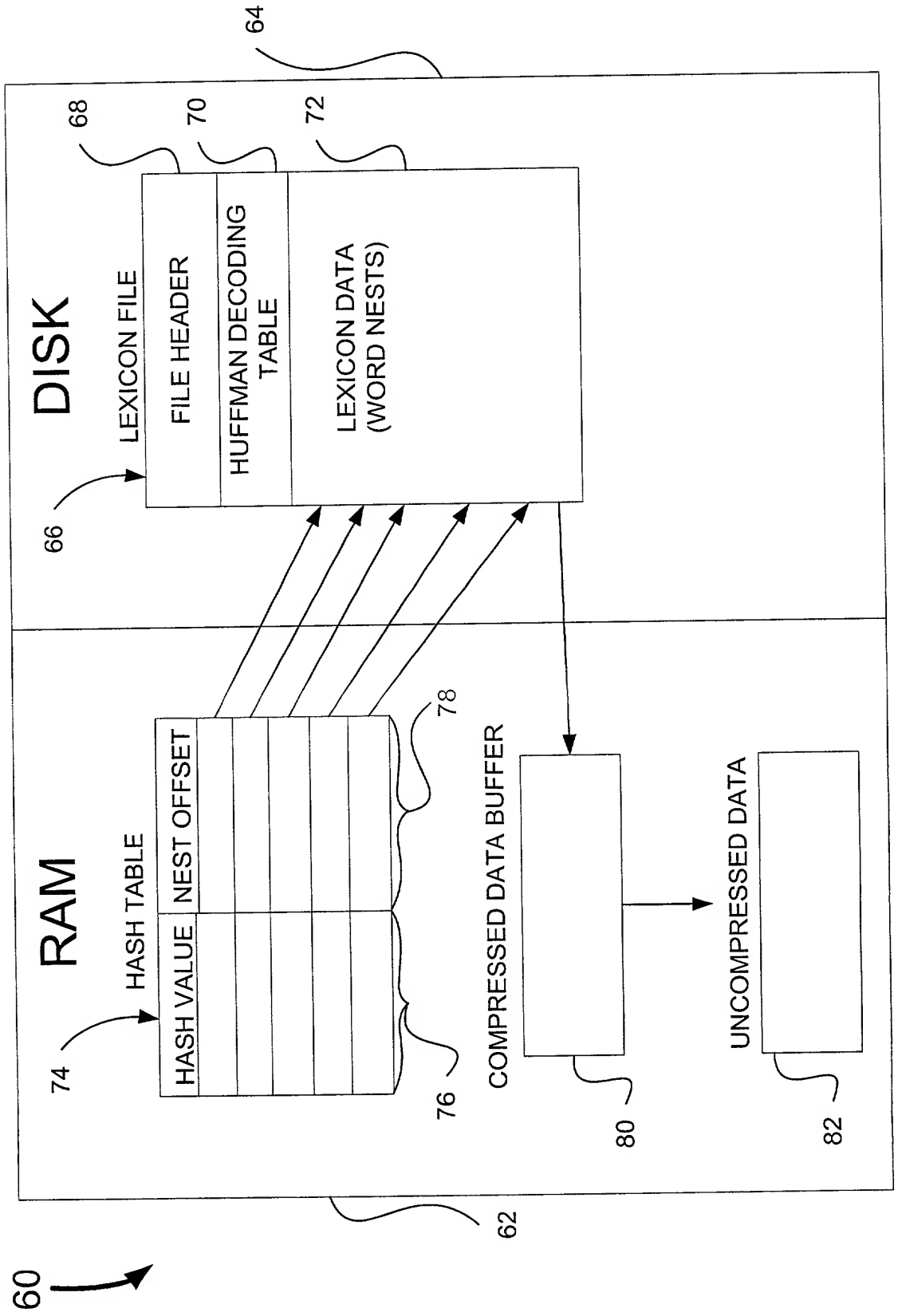
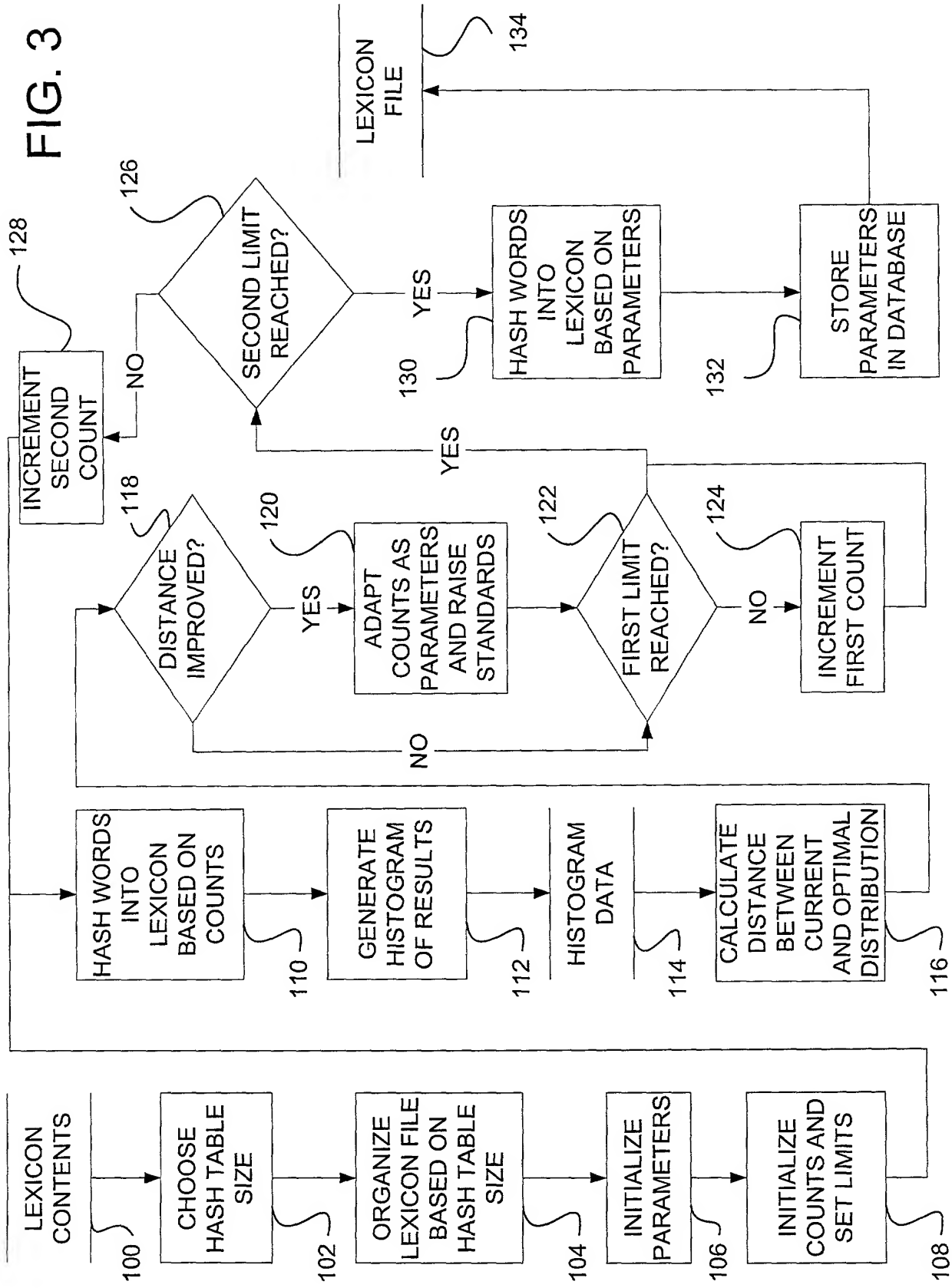

60
62
64
DISK
LEXICON FILE
66
68
FILE HEADER
70
HUFFMAN DECODING TABLE
72
LEXICON DATA (WORD NESTS)
RAM
74
HASH TABLE
HASH VALUE
NEST OFFSET
76
78
COMPRESSED DATA BUFFER
80
UNCOMPRESSED DATA
82

FIG. 3


LEXICON CONTENTS
100
CHOOSE HASH TABLE SIZE
102
ORGANIZE LEXICON FILE BASED ON HASH TABLE SIZE
104
INITIALIZE PARAMETERS
106
INITIALIZE COUNTS AND SET LIMITS
108
HASH WORDS INTO LEXICON BASED ON COUNTS
110
GENERATE HISTOGRAM OF RESULTS
112
HISTOGRAM DATA
114
CALCULATE DISTANCE BETWEEN CURRENT AND OPTIMAL DISTRIBUTION
116
DISTANCE IMPROVED?
118
YES
ADAPT COUNTS AS PARAMETERS AND RAISE STANDARDS
120
NO
FIRST LIMIT REACHED?
122
NO
INCREMENT FIRST COUNT
124
YES
SECOND LIMIT REACHED?
126
NO
INCREMENT SECOND COUNT
128
YES
HASH WORDS INTO LEXICON BASED ON PARAMETERS
130
STORE PARAMETERS IN DATABASE
132
LEXICON FILE
134

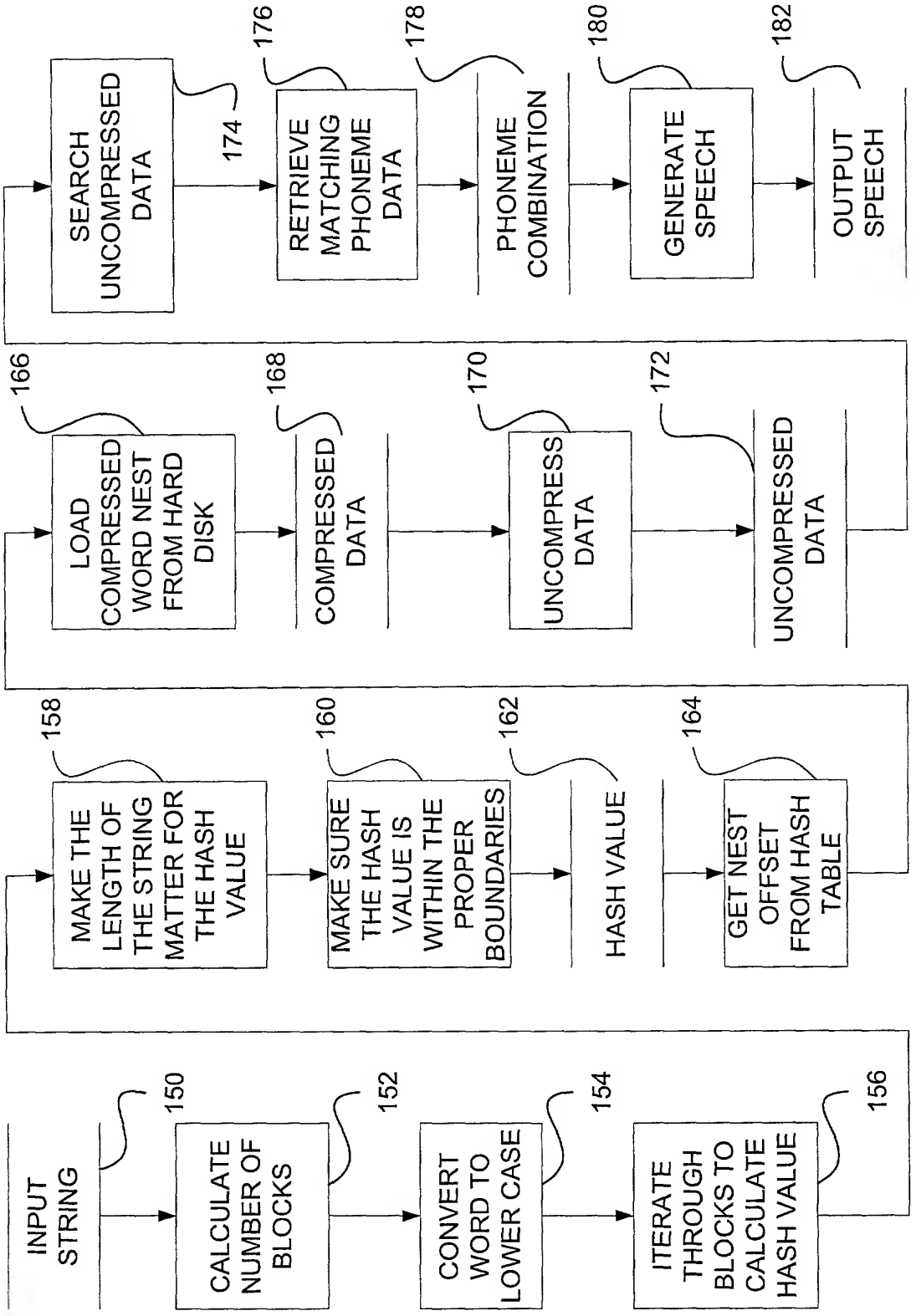

INPUT STRING
150
CALCULATE NUMBER OF BLOCKS
152
CONVERT WORD TO LOWER CASE
154
ITERATE THROUGH BLOCKS TO CALCULATE HASH VALUE
156
MAKE THE LENGTH OF THE STRING MATTER FOR THE HASH VALUE
158
MAKE SURE THE HASH VALUE IS WITHIN THE PROPER BOUNDARIES
160
HASH VALUE
162
GET NEST OFFSET FROM HASH TABLE
164
LOAD COMPRESSED WORD NEST FROM HARD DISK
166
COMPRESSED DATA
168
UNCOMPRESS DATA
170
UNCOMPRESSED DATA
172
SEARCH UNCOMPRESSED DATA
174
RETRIEVE MATCHING PHONEME DATA
176
PHONEME COMBINATION
178
GENERATE SPEECH
180
OUTPUT SPEECH
182

FIG. 4